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REMARKS OF JAMES T. McBROOM, ASSISTANT DIRECTOR, BUREAU OF SPORT FISHERIES AND WILDLIFE, U. S. DEPARTMENT OF THE INTERIOR, AT THE REGION III MEETING OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS, OPERATING COMMITTEE ON DESIGN, OKLAHOMA CITY, OKLAHOMA, SEPTEMBER 21, 1966

Fish and Wildlife Coordination in the Highway Program

A few months ago, Mrs. Lyndon B. Johnson said, in speaking to the American Road Builders' Association:

> The voices that you have been hearing -- and that I have been hearing -- are going to rise in volume. For that voice is the voice of all of us -- reaching out, aspiring to a better, more constructive, more lovely world.
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> The standard criteria on the routing of roads, such as careful consideration of the taxpayer's dollar and safety, are, of course, still with us.
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> But a civilized society -- and a humane government -- can do more than that. And plainly, it is clear that we must also weigh in the social and aesthetic values of the routing.

We in the Bureau of Sport Fisheries and Wildlife have been engaged in a dialogue with road building and designing people for 10 years -- our whole life as a separate Bureau.

In 1956, speaking before the American Road Builders' Association assembled in Miami Beach, Florida, Dr. F. S. Henika of our staff stressed the importance of cooperative planning -- not only for highways, but for fish and wildlife as well. He urged early coordination, pointing out some of the possibilities of such efforts -- creative small lakes and wetlands and safe passage for migratory fish.

In 1959, I was honored to address the same Association, assembled in Dallas, Texas, for its annual convention. Some of the things I said on that occasion may bear repeating here.

> The fish and wildlife resources of this Nation have great importance to the health and welfare of America. Fish and wildlife resources, like any other living beings, have to have water and land for existence and survival.
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> These fish and wildlife resources are today under tremendous pressure in the keen battle for land and water that is characteristic of our expanding population and industry -- and, yes, our expanding road network. The demands of civilization are rolling back Nature's habitat for these living resources at an alarming rate. But this does not have to mean the early demise of fish and wildlife if proper consideration is given to these resources in the Nation's development.
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> It is our hope that the State highway departments, the State fish and game departments, the Bureau of Public Roads, and the Fish and Wildlife Service can work out methods of cooperation to the end that fish and wildlife are not needlessly destroyed, and so that maximum benefits can be obtained for fish and wildlife from the highway program.

Today, that hope of 1959 is closer -- very perceptibly closer -- to realization. The 10 year dialogue between road designers and fish and wildlife conservationists is now bearing some fruit.

In the Federal Government, seeds of action on highway-fish and wildlife problems began to push above the surface about 1962, in both the Legislative and Executive Branches. Early in that year, Senator Lee Metcalf of Montana and Congressman John Dingell of Michigan introduced in the Congress bills designed to cope with the serious fish and wildlife conservation problems associated with highway design and construction in the Federal-aid Highway Program. Secretary of the Interior Stewart L. Udall and former Secretary of Commerce Luther Hodges later arranged for inter-departmental action to come up with an Administrative solution.

Federal Highway Administrator Rex M. Whitton and former Assistant Secretary of the Interior Frank P. Briggs gave the job of implementing the joint effort to the Bureau of Public Roads -- represented by its then General Counsel, Mr. David S. Black -- and to the Bureau of Sport Fisheries and Wildlife, which I was privileged to represent. In the ensuing months, numerous conferences were held by our interdepartmental committee and much staff work was done to find an administrative solution to the problem. The end result was Instructional Memorandum 21-5-63, issued by the Bureau of Public Roads on June 12, 1963. Since you are probably all familiar with the memorandum, there is no point to review it in detail here. Suffice it to say that it requires formal coordination procedures between the State highway departments and the State fish and game departments.

Like the magazine advertisement for the Volkswagon some time back -- the one showing that little beetle with the flat tire and the caption "Nobody's Perfect" -- this Instructional Memorandum isn't a perfect vehicle to do the job intended. But in a little more than three years of testing, much has been achieved as a result of its adoption. Later in these remarks, I will mention some of the accomplishments.

I was invited here to tell you what fish and wildlife interests want from highway design.

What we want is recognition by the designers and builders of highways that, where good fish and wildlife habitat -- a trout stream for example -- is involved, the least costly design of a highway is not necessarily the best design of a highway.

We believe that highway designers and builders must stand ready and willing to build the more expensive route -- not one in the bed of a trout stream -- and call this the best route.

This kind of thinking, we believe, is in line with the current drive to protect our natural environment. We are wealthy enough in money, and poor enough in natural environment for most of us, so that we can invest a reasonable amount of dollars to avoid tearing up and destroying things -- like a fine trout stream -- because we need a new road in the general vicinity.

But lest I sound as if the road picture is always a bleak one from a fish and wildlife standpoint, let me hasten to point out that the highway program provides many opportunities for the protection and enhancement of fish and wildlife habitat.

Let me mention a few examples, many of them dividends from our coordination effort with the Bureau of Public Roads -- the Instructional Memorandum of June 1963.

In California, on Interstate Highway 5 in Shasta and Siskiyou Counties, fish ladders have been constructed in box culverts to avoid blocking the upstream passage of fish.

In Colorado, the State's standard highway fence has been redesigned by adjusting the wire spacing, at the suggestion of the Colorado Department of Fish, Game and Parks. Hopefully, this will reduce injury and mortality to big game animals which get entangled in the top wires when attempting to jump the fences.

In Connecticut, approximately 3,000 feet of Route 72 in Cromwell was relocated to the edge of Cromwell Meadows from the original proposed alignment through this wetland. To further minimize damage to the Meadows, which provides good habitat for waterfowl, other marsh birds, and small mammals, a special box culvert was installed in the relocated highway to afford human access to the adjacent Round Meadow Marsh and to avoid disrupting the natural water flow between the two areas.

In Georgia, on two Interstate projects, excess material, ordinarily wasted, was deposited in pre-determined locations in the form of dikes and elevated plateaus to develop fishing lagoons. This was done at the request of the State Game and Fish Commission.

In Michigan, the State Highway Department has cooperated with the Michigan Department of Conservation by raising culverts and crossroad pipes to utilize embankments to maintain desirable water levels for the benefit of fish and game.

In Montana, on Highway I-90, several long channel changes were made in the Clark Fork River. To provide a low water channel, the channel bottom was tipped and meanders were constructed to lengthen the river, which had been shortened by the channel work. This work cost about $85,000.

In the same State, on Highway I-15, the Highway Department constructed 188-foot and 163-foot steel and concrete bridges to eliminate a channel change and preserve a meander in the Beaverhead River. The bridges cost approximately $190,000. Large boulders were placed a minimum of 25 feet apart in all channel changes to provide pools for fish.

In Nebraska, the Department of Roads is creating a "Chain of Lakes" along Interstate Highway 80 in cooperation with the Game, Forestation and Parks Commission. Along a 74-mile section of the highway between Grand Island and Lexington, about 65 lakes averaging 12 surface acres will be developed in borrow areas. These lakes, many of which are suitable for fish production, are being developed by the Game, Forestation and Parks Commission as conservation and recreation areas. Here is fish and wildlife-highway coordination at its best -- the creation of hundreds of acres of good fishing water where none existed before as a direct result of highway construction.

In North Dakota, outdoorsmen are getting double-barrelled benefits from highway construction, thanks to some good planning.

New recreational areas are beginning to appear as road improvement work throughout the State is planned and contracted by the North Dakota Highway Commission and work nears completion on Interstate 94, which bisects the State from east to west.

With the support of Governor William Guy two years ago, wildlife biologists of North Dakota Game and Fish Department and the Bureau of Sport Fisheries and Wildlife began meeting regularly with the planning engineers of the North Dakota Highway Commission.

Recommendations by the wildlife biologists include adjusting locations of culverts to benefit or protect existing wetlands, raising culverts to develop small lakes in coulees, using road approaches as ditch blocks to prevent loss of wetlands along borrow pits and the construction of dikes to prevent drainage of existing wetlands into borrow areas.

With such recommendations included in the project plans by the highway engineers, the biologists then studied each area to determine what additional developments could be carried out to improve conditions for fish and wildlife as well as the sportsmen who would be using these areas. Coordination of the program is started early.

Each segment of a new project is studied carefully to determine the potential for improving fish and wildlife habitat. Once agreement is reached, the recommendations are included in the project plan and a formal agreement is signed.

In Oklahoma, the Department of Highways, as a matter of policy, attempts to avoid existing lakes and ponds wherever possible. This is done by shifting alignment of new highway locations or by restricting rights-of-way to avoid lakes and ponds or to mitigate damages to them. The Department has also created numerous ponds by locating borrow pits on small water courses. Some of these water areas have served as fishing ponds.

In Vermont, two highway relocations were made to mitigate stream damage, at the request of the Vermont Fish and Game Board. Also, on U.S. Route 4, a highway embankment was used to impound water for fish and wildlife, and on Highway I-89, a bridge opening was increased to avoid damage to a stream and its fish.

These then, are some of the accomplishments of highway-fish and wildlife coordination throughout the Country. Others could be cited.

It would not be accurate to leave you with the impression that coordination under the Instructional Memorandum is pure accomplishment -- with no kinks or major problems. That would be too much to expect of any procedure involving so many complexities and so many interests.

To the limits of their capabilities, the State conservation agencies and the Bureau of Sport Fisheries and Wildlife are working with the State highway departments and the Bureau of Public Roads to iron out difficulties when they occur. This is a continuing process, as you know, and there can be no slackening of effort along this line -- by any of us. If we do not try to add to our accomplishments and to untie knots in the coordination rope under the Memorandum, as they occur, the trend of improvement in highway-fish and wildlife resource relations will dip instead of climb.

As I mentioned earlier, the least costly design of a highway is not necessarily the best design. The highway people should be ready and willing to build more costly roads at times to prevent serious damage to high quality fish and wildlife habitat. Such expenditures need not be considered as wasted in terms of a return on the investment. Fishermen and hunters represent an important segment of the highway users and drive a great many miles by automobile in connection with their activities.

They also spend considerable sums during their fishing and hunting trips for gasoline, food, lodging, and the like. These expenditures are particularly important to small communities located near the better fishing and hunting areas. To give you an idea as to the economic significance of fishing and hunting, I'd like to cite a few figures from our National Survey of Fishing and Hunting for 1965, just off the press.

Approximately 50 million people fished or hunted at least once during 1965. Of these, about 33 million can be considered as the more serious sportsmen. The detailed findings from our 1965 survey are related to this latter group.

These 33 million people spent $4 billion and enjoyed 708 million days of recreation. The next figure should be of particular interest to highway planners. These people traveled more than 30 million passenger miles by automobile on fishing and hunting trips in 1965. About 22 million of these passenger miles were for fishing and about 8 million were for hunting. Of the $4 billion spent by sportsmen in 1965, 600 million dollars was for transportation and another 600 million dollars was for food and lodging during the fishing and hunting trips. Much of these expenditures represented income to gasoline stations and service establishment along the Nation's highways.

In a survey of all types of outdoor recreation in 1965, the Bureau of Outdoor Recreation of our Department found that there were over 8 million people who participated in bird watching and another 8 million people who participated in wildlife photography.

As you can see, there is a very large segment of the American public who participate in fishing, hunting and other wildlife-related recreation. Expenditures by these people are substantiated and can have a significant impact on the economies of local communities. The needs of this substantial group of highway users should be considered fully in the design and routing of the Nation's highways.

Let me return for a minute before closing to the major point of my talk today. We need to build roads -- and dams and houses and factories and most of the other requirements of our national economy -- with an eye to optimum development. Not just least cost, single purpose development. The winds of change are sweeping away past concepts of least cost and single purpose development to the exclusion of all other considerations.

I think Mrs. Johnson's words, which I quoted earlier, are a reflection of this evolving trend in public thinking.

Let's face it: A limit to our natural resources, an expanding population with its increasing need for goods and services, and a demand for living space, outdoor recreation, natural beauty, and fish and wildlife are causing this change in public thinking.

We need the ribbons of concrete or asphalt to get from one place to another. But the highways can be more than that. With imagination, with appreciation of what the public wants from road design beyond fast and efficient transportation, these highways can add to rather than detract from Nature's endowment and man's enjoyment of that endowment.

With proper concern for natural resources, roads can also be the means, in themselves, of providing for mankind's enjoyment of Nature -- like the fishing waters I noted in the borrow areas along a Nebraska Interstate.

All it takes is an escape from tunnel vision -- a release from myopia -- on the part of those who must change the landscape to accommodate all the new people who show up at the Nation's breakfast tables every morning.

Our problem is to save as much of our natural resources as we have left, and to disturb them as little as possible where disturbance cannot be avoided. Designing our highways is one phase of development to meet the Nation's needs in which these facts of life must be constantly kept in mind.

Working together, the highway designers and builders and the natural resources agencies can do the job that needs to be done of meeting the Nation's road transportation needs and protecting, yes, even enhancing our natural environment.